

REMARKS

The application has been amended and is believed to be in condition for allowance.

Applicant appreciates the interview and the kind suggestions concerning the use of the term "implantation" and the use of negative limitations to exclude the recitations unintentionally reading on unrelated prior art structures, i.e., stents.

Claim 1 has been amended to remedy the stated basis of rejection under section 112, 2nd paragraph. Withdrawal of this rejection is therefore solicited.

Claim 11 was rejected as anticipated by DUHAYLONGSOD et al. 6,241,741.

Claim 11 was rejected as anticipated by GOLDEN 2004/0050393.

Claims 1-4 and 14 were rejected as obvious over DUHAYLONGSOD in view of NOBLE 3,221,746.

Claims 5-9 were rejected as obvious over DUHAYLONGSOD, NOBLE, and in further view of KILLION et al. 6,159,238.

Claims 10, 12, and 13 were rejected as obvious over DUHAYLONGSOD, NOBLE, and in further view of HUGHES et al. 4,728,328.



With reference to application paragraphs [0003-0004], the invention addresses devices for treating an aortic aneurysm. Treatment is a surgical operation in which a tract of damaged aorta is sectioned and substituted by a tubular prosthesis made of a biocompatible material, such as Dacron or PTFE, which is then sutured to healthy tracts of the aorta.

As per paragraph [0009], the present invention provides a device simplifying the anastomosis operations between the prosthesis and the aorta, i.e. the suture operations between the prosthesis and the aorta. The slender elements 3 arranged in proximity of the first end 2a are proximal slender elements 3, while the slender elements arranged in proximity of the second end 2b are distal slender elements. The tubular element 2 exhibits, in longitudinal section, an approximately truncoconical profile, with a decreasing transversal section in the direction going from the first end 2a to the second end 2b.

As shown in Figure 2, the prosthesis 10 is passed into the tubular element 2 and is externally folded over the first end 2a with the folded segment of prosthesis fastened on the proximal slender elements 3, so that the slender elements 3 penetrate completely in and through the



wall of the prosthesis 10. The free ends 3a of the proximal slender elements 3 penetrate into the aortic wall, preventing any tendency of the prosthesis 10 to displace in a downwards direction.

As discussed in the interview and outlined by paragraph [0023], the present invention offers important advantages including making anastomosis operations between the prosthesis and aorta extremely simple and rapid (as the anastomosis is limited to performance of the straight in-and-out suture on the proximal neck of the aorta and the suture is performed using large-step stitches, the risk of ischemia of the aorta wall is limited, and as a consequence so is detachment of the prosthesis).

Why the claims are patentable.

As to claim 1, none of the references (individually or in combination) teach the recited combination of features.

GOLDEN does not disclose a non-stent, tubular connecting element (2) having a first proximal end (2a) and a second distal end (2b), the tubular element exhibiting, in a longitudinal section and prior to implanting, a truncoconical profile with a decreasing transversal section in a direction going from the first proximal end to the



second distal end. GOLDEN does not disclose a connecting element that is implanted. GOLDEN does not disclose a truncoconical profile.

DUHAYLONGSOD does not disclose a non-stent, tubular connecting element (2) having a first proximal end (2a) and a second distal end (2b), the tubular element exhibiting, in a longitudinal section and prior to implanting, a truncoconical profile with a decreasing transversal section in a direction going from the first proximal end to the second distal end. DUHAYLONGSOD does not disclose a truncoconical profile. DUHAYLONGSOD discloses a stent element and therefore does not satisfy the non-stent recitation.

DUHAYLONGSOD does not disclose an aortic prosthetic element (10) made of a biocompatible material to create a joint between the prosthetic element and tracts of the aortic, the aortic prosthetic element attachable to the first proximal end of the tubular connecting element by the slender elements completely puncturing through a wall of the aortic prosthetic element with free ends of the slender elements being exposed. DUHAYLONGSOD does not disclose an aortic prosthetic element. There is no indication that the elements 12 of DUHAYLONGSOD have the structure necessary to



satisfy the recitation of an aortic prosthetic element. DUHAYLONGSOD is not seen to disclose that the barbs 36 puncture completely through the tubular prosthesis 12. Because of the use of the device (as illustrated by Figure 8), it would be disadvantageous to have the free ends of the barbs extend through the element 12 as the free ends of the barbs would likely damage the interior of second vessel 14.

Neither DUHAYLONGSOD nor GOLDEN anticipates or renders obvious the claimed invention.

DUHAYLONGSOD in Figures 1A and 3A illustrate the barbs facing toward the first end and not towards the second end (2b) as per claim 2 and inconsistent with claim 4 (wherein, the free ends face an opposite end from an end at which the slender elements are arranged).

The references do not teach a greater density of slender elements (3) at the first proximal end (2a) than at the second distal end (2b) as per claim 7.

The references are not seen to suggest that the slender elements arranged in proximity of the first proximal end being are longer and more prominent than the slender elements arranged in proximity of the second distal end, as per claim 8. Further, why would one of skill so



modify DUHAYLONGSOD in this way? It is not sufficient that DUHAYLONGSOD could be modified. There must be motivation and the result must be a practical device for the intended purpose of DUHAYLONGSOD.

There is no reason in DUHAYLONGSOD to suture the proximal end of element 34'. Again, recall that this device is to be introduced into second vessel 14. The motivation has to make sense in view of DUHAYLONGSOD. It is not sufficient that the combination is possible, as the combination must be reasonably motivated and provide a practical result. See the recitations of "the suture and slender elements are configured to be tightened around the tubular connecting element and wherein the tightening functions to puncture the tracks of the aortic with the plurality of outwardly-projecting slender elements". This does not make sense for the DUHAYLONGSOD device.

As to KILLION, this discloses a stent and therefore does not satisfy the non-stent recitation. The small opening of KILLION is at the proximal end and the large opening is at the distal end. KILLION is designed for a specialized location (internal the carotid artery) and would not therefore be suitable for use with



DUHAYLONGSOD so as to meet the recitations of the claimed invention.

In view of the above, claim 1 and its dependent claims are believed patentable.

As to claim 11, GOLDEN does not disclose a non-stent tubular connecting element comprising a first end, a second end, and a plurality of outwardly projecting slender elements arranged proximity at both ends. GOLDEN does not disclose a connecting element that is implanted. GOLDEN does not disclose projecting elements at both ends.

DUHAYLONGSOD does not disclose a non-stent tubular connecting element as recited.

Thus, neither reference anticipates claim 11. As discussed above, there is no reason that DUHAYLONGSOD would be modified to further comprise a suture, wherein the suture may be tightened around the tubular connecting element and wherein the tightening functions to puncture the blood vessel with the plurality of outwardly-projecting slender elements. Thus, claim 12 is also non-obvious.

As to claim 13, the references do not disclose a non-stent tubular connecting element (2) bearing a plurality of outwardly-projecting slender elements (3) arranged in proximity of at least the first proximal end



(2a), together with a tubular prosthesis (10) inserted into the tubular connecting element (2) and folded around at least one end of the tubular connecting element with the outwardly-projecting slender elements puncturing the tubular prosthesis, the tubular prosthesis being free of connection to the other end of the tubular connecting element and configured for implantation in the body.

For both claims 11 and 13, dependent claims require that the tubular connecting element (2) exhibit, in a longitudinal section and prior to implantation, a truncoconical profile with a decreasing transversal section in a direction going from the proximal end to second distal end.

Thus, claims 11 and 13 are also believed patentable, together with their dependent claims.

In view of the above, reconsideration and allowance of all the pending claims are respectfully requested.

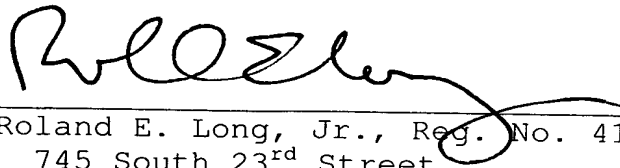
The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any



additional fees required under 37 C.F.R. § 1.16 or under 37  
C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



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Roland E. Long, Jr., Reg. No. 41,949  
745 South 23<sup>rd</sup> Street  
Arlington, VA 22202  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

REL/mjr